

AMENDMENTS TO THE CLAIMS

Claim 1. (Canceled)

2. (Currently Amended) ~~An ionization method according to claim 1,~~
~~wherein the laser beam is an infrared beam, and the substance that does not readily~~
~~absorb the laser beam is any of diamond, silicon or germanium~~ In a laser spray method
for ionizing a liquid sample by irradiating, with a laser beam, the end of a capillary into
which the sample has been introduced, an ionization method characterized by
using an infrared beam as the laser beam, and
forming at least the end of the capillary of any of diamond, silicon or
germanium which is a substance that does not readily absorb the infrared laser beam
used.

3. (Currently Amended) An ionization method according to claim 1 ~~or~~ 2,
wherein a diamond tip provided with a small cavity for communicating with a slender
cavity in an insulated capillary is attached to the end of the capillary.

4. (Currently Amended) An ionization method according to claim 2 ~~any one~~
~~of claims 1 to 3~~, wherein at least the end of the capillary is placed in vacuum in the
vicinity of an ion introduction port of a mass analyzer.

5. (Currently Amended) An ionization method according to claim 2 ~~any one~~
~~of claims 1 to 3~~, wherein at least the end of the capillary is placed under atmospheric
pressure in the vicinity of an ion introduction port of a mass analyzer.

6. (Currently Amended) An ionization method according to claim 2 [[1]], wherein an electric field is formed in the vicinity of the end of the capillary by forming the capillary of an electrical conductor and applying a high voltage to the capillary.

7. (Currently Amended) An ionization method according to claim 2 [[1]], wherein the capillary is formed of an insulator, a conductive wire is placed inside the capillary and a high voltage is applied to the conductive wire.

8. (Currently Amended) An ionization method according to claim 2 ~~any one of claims 1 to 3~~, wherein at least the end of the capillary is placed in a corona-discharge gas, a corona-discharge electrode is provided in the vicinity of the end of the capillary and a positive or negative high voltage is applied to the corona-discharge electrode to thereby induce a corona discharge.

9. (Original) An ionization method according to claim 8, wherein the capillary is formed of an insulator, a conductive wire is placed inside the capillary and the end of the conductive wire is caused to project slightly beyond the end of the capillary to thereby serve as a corona-discharge electrode.

10. (Currently Amended) An ionization method according to claim 8 ~~or 9~~, wherein the end of the capillary is placed in atmospheric pressure.

11. (Currently Amended) An ionization method according to claim 8 ~~any one of claims 8 to 10~~, wherein an assist gas be supplied to the vicinity of the end of the capillary.

12. (Original) An ionization method according to claim 11, wherein an outer tube is provided on the outer side of the capillary with a clearance being left between itself and the outer peripheral surface of the capillary, and the assist gas is introduced to the vicinity of the end of the capillary through a space between the outer peripheral surface of the capillary and the outer tube.

13. (Currently Amended) An ionization method according to claim 2 ~~any one of claims 1 to 12~~, wherein irradiation is with a pulsed laser beam.

14. (Currently Amended) An ionization method according to claim 2 ~~any one of claims 1 to 12~~, wherein the liquid sample is passed through the capillary continuously and is irradiated with a laser beam that is generated continuously.

15. (Currently Amended) An ionization method according to claim 2 ~~any one of claims 1 to 14~~, wherein the end of the capillary is irradiated with the laser beam directed substantially along the axial direction of the capillary.

16. (Currently Amended) An ionization method according to claim 2 ~~any one of claims 1 to 14~~, wherein the end of the capillary is irradiated with the laser beam from a direction substantially perpendicular to the axial direction of the capillary.

Claim 17. (Canceled)

18. (Currently Amended) ~~An ionization apparatus according to claim 17, wherein the capillary is formed of an insulating material, a diamond tip provided with a slender cavity that communicates with a slender cavity in the capillary is attached to~~

~~the end of the capillary, and a conductive wire to which a high voltage is applied is placed inside the slender cavity of the capillary~~ In a laser spray apparatus for ionizing a liquid sample by irradiating, with a laser beam, the end of a capillary into which the sample has been introduced, an ionization apparatus characterized in that

the capillary is formed of an insulating material, a diamond tip provided with a slender cavity that communicates with a slender cavity in the capillary is attached to the end of the capillary, and a conductive wire to which a high voltage is applied is placed inside the slender cavity of the capillary.

19. (Currently Amended) ~~An ionization apparatus according to claim 17 or 18, wherein a corona discharge electrode is provided in the vicinity of the end of the capillary~~ In a laser spray apparatus for ionizing a liquid sample by irradiating, with a laser beam, the end of a capillary into which the sample has been introduced, an ionization apparatus characterized in that

at least the end of the capillary is formed of a substance that does not readily absorb the laser beam used, and

a corona-discharge electrode is provided in the vicinity of the end of the capillary.

20. (Original) An ionization apparatus according to claim 18, wherein the conductive wire is inside the capillary and extends to a point near the end of the capillary.

21. (Original) An ionization apparatus according to claim 18, wherein the end of the conductive wire is caused to project slightly beyond the diamond tip at the end of the capillary.

22. (Currently Amended) An ionization apparatus wherein an ionization space communicating with a mass analyzer through an ion introduction port is formed by a housing on the outer side of the ion introduction port of the mass analyzer;

at least the end of the capillary into which a liquid sample is introduced is placed inside the ionization space;

a laser device for irradiating the end of the capillary is placed outside the ionization space; and

at least the end of the capillary is formed of any of diamond, silicon or germanium which is a substance that does not readily absorb the laser beam used.

Claims 23-29. (Canceled)